

## SAFETY PLUG

### FIELD OF THE INVENTION

The present invention relates to a safety plug, especially to the plug featuring  
5 to prevent a short circuit caused by PVC material melting at high temperature.

### BACKGROUND OF THE INVENTION

Generally, electrical products use alternating current (AC) to connect to a  
plug by way of an electrical cord, and two types of AC are 110 and 220 voltages.  
10 Referring to Figs. 4 and 5, which are sectional views of plugs in prior arts,  
wherein a 110-V plug 1 is the most common structure and produced in a broad  
way. The structure comprises two pins 11, and two ends of the pins 11 connected  
to a copper electrical cord 12 by melting. After that, two certain periods of the  
pins 11 and the same length of the copper electrical cord 12 are shrunk to become  
15 an outer body 13 with PVC coating. An end of the outer body 13 is a flexible  
tailing wing 14 for exposing the front ends of the pins 11 to the plug 1. It is to  
connect the front ends with a conducting piece in an outlet for producing the plug  
1 with PVC material.

As can be seen, the pins 11 are the parts which generate heat while the plug  
20 is in usage, especially a melting point where the ends of the pins connecting to  
the copper electrical cord 12 is a heating source and the temperature thereof is  
greatly raised up while in the state of overload. According to that mentioned  
above, the PVC material contacting with the pins 11 may then change to be  
harder due to the high temperature after being used for a while. It causes the

relative positions between the two pins 11 to be variable or the plug may be deformed, and therefore the melted PVC material caused by the pins 11 generating high heat while in abnormal overload derives the short circuit of the two pins 11 to produce a spark and more other critical conditions to easily bring  
5 about a fire.

Depending on the conditions of the prior arts, the traditional plug 1 is certainly with the shortcomings of deformation and the short circuit caused by overheating.

Other and further features, advantages and benefits of the invention will  
10 become apparent in the following description in conjunction with the following drawings. It is to be understood that the foregoing general description and the following detailed description are exemplary and explanatory but are not to restrict the invention. The accompanying drawings are incorporated and constitute a part of this application and, together with the description, serve to  
15 explain the principles of the invention in general terms. Like numerals refer to like parts throughout the disclosure.

## **SUMMARY OF THE INVENTION**

The primary objective of the present invention is to provide a safety plug for  
20 preventing a short circuit due to PVC material melting at high temperature. The features are: to plant a heat-resistant object in between two pins of the safety plug, and to form the two pins with PVC material by way of shrink; hence movement, deformation and short circuit of the two pins are avoided.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a 3-D sketch of a safety plug of the present invention;

Fig. 2 is a perspective view of the safety plug of the present invention;

Fig. 3 is a sectional view of the safety plug of the present invention;

5 Fig. 4 is a perspective view of a plug in the prior arts;

Fig. 5 is a sectional view of the plug in the prior arts.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Please refer to Figs. 1, 2 and 3, which are 3-D sketches of a safety plug of  
10 the present invention, a perspective view of the safety plug of the present  
invention and a sectional view of the safety plug of the present invention. A  
theory of the present invention is to provide a safety plug for preventing a short  
circuit caused by PVC material melting at high temperature. Firstly, to plant a  
heat-resistant and hardness-resistant object 20 as PBT (Polybutylene  
15 Terephthalate) in between two pins 21 of a safety plug 2; to form an outer body  
23 for wrapping around rear sections of the two pins 21 and a certain period of an  
electrical cord 22 with PVC material by way of shrink, such as Molding, as well  
as including a flexible tailing wing 24. It is obvious that the present invention can  
avoid movement and deformation of the pins 21 that may cause a short circuit at  
20 high temperature.

Although the safety plug 2 is made of the material of the heat-resistant  
object 20 with fixing, isolating, and heat-resistance, such as PBT, which is  
practical; other types of material may include heat-resistant plastic material,  
ceramic material, etc.

The heat-resistant object 20 cannot be limited by shape and fixing ways for extending the scope of the applications thereof.

While the invention has been described by way of example and in terms of a preferred embodiment, it is to be understood that the invention is not limited  
5 thereto. To the contrary, it is intended to cover various modifications and similar arrangements and procedures, and the scope of the appended claims therefore should be accorded the broadest interpretation so as to encompass all such modifications and similar arrangements and procedures.